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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,906	07/07/2003	Masanori Araki		4320
24956 7590 02/22/2007 MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314			EXAMINER KIM, HAROLD J	
			ART UNIT 2181	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	
3 MONTHS			02/22/2007	
			DELIVERY MODE	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/612,906	Applicant(s) ARAKI ET AL.	
	Examiner Harold Kim	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/458,705.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/31/2007 has been entered

2. This Office Action is in response to the filing of the RCE, the arguments have been considered but they are moot in view of the new ground(s) of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. This action is made **NON-FINAL**.

3. Claims 25-39 are presented for examination

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. ~~Claims 25-39 are rejected under 35 U.S.C. 102(e) as being anticipated by~~

Beardsley et al., US Patent no. 6,240,467 B1.

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6. In re claim 25, Beardsley et al. shows an array system [figs 2 and 7; col 9, line 63] comprising:

a plurality of disk drives [fig 2, 26a, 26b]; and

control unit [fig 2, 18] for controlling read/write of data requested [90, fig 7] by a plurality of host processors [24a, 24b, fig 2] into the plurality of disk drives, using a plurality of logical volumes [figs 3 and 6; col 5, line 65] constituted by storage areas of the plurality of disk drives [A, B, C, fig 3], and

the control unit being controllable to allow [92, 94, fig 7] or delay [106, fig 7] a read request or a write request [I/O operation, 90, fig 7] sent from a host computer [Host 16, fig 2] which has no exclusive control function, by controlling allowance or delay of the read request or the write request based on information received from the host computer with the read request or the write request [fig 7],

wherein, when the control unit receives multiple requests [90, 92, fig 7] from different host processors for a logical storage area [92, fig 7] having a different size than a size of one of the logical volumes [90, fig 7], the control unit controls to allow a first read request or write request [I/O operation, 90, fig 7] of the multiple requests [92, 94, fig 7] and controls to delay a second read request or write request of the multiple requests [104, 106, fig 7].

7. In re claim 26, Beardsley et al. shows the control unit includes a plurality of host adaptors [20, fig 2] which control data transfer between the control unit and the plurality of disk drives.

8. In re claims 27 and 28, Beardsley et al. shows a plurality of disk adaptors [18 fig

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2; col 6, lines 20-41] which control the read/write plurality of logical volumes.

9. In re claim 29, Beardsley et al. shows cache memories [col 9, lines 17-26] which enable the transfer of data between the host adaptors and the disk adaptors.

10. In re claim 30, Beardsley et al. shows a control memory [figs 3 and 6] which stores control information into a plurality of tables.

11. In re claim 31, Beardsley et al. shows the control unit controls to delay the second read or write request of the multiple requests if a data range of the second read or write request and a data range of the first read or write request overlap a same logical storage area [90, 92, 100, 104, 106, fig 7] and the control unit permits the second read or write request and the first read or write request to be handled in parallel if their data ranges do not overlap in the same logical storage area [col 9, lines 17-21; 94, fig 7].

12. In re claim 32, Beardsley et al. shows an array system [figs 2 and 7; col 9, line 63] comprising:

a plurality of disk drives [fig 2, 26a, 26b]; and

control unit [fig 2, 18] for controlling read/write of data requested [90, fig 7] by a plurality of host processors [24a, 24b, fig 2] into the plurality of disk drives, using a plurality of logical volumes [figs 3 and 6; col 5, line 65] constituted by storage areas of the plurality of disk drives,

the control unit being controllable to allow [92, 94, fig 7] or delay [106, fig 7] a read request or a write request [I/O operation, 90, fig 7] sent from a host computer [Host 16, fig 2] which has no exclusive control function, by controlling allowance or delay of

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the read request or the write request based on information received from the host computer with the read request or the write request [fig 7],

wherein, when the control unit receives multiple requests [90, 92, fig 7] from different host processors for a logical storage area [92, fig 7] having a different size than a size of one of the logical volumes [90, fig 7], and determines that the data ranges of the multiple requests overlap, the multiple requests are not handled in parallel [100, fig 7].

13. In re claim 33, Beardsley et al. shows the control unit includes a plurality of host adaptors [20, fig 2] which control data transfer between the control unit and the plurality of disk drives.

14. In re claims 34 and 35, Beardsley et al. shows a plurality of disk adaptors [18 fig 2; col 6, lines 20-41] which control the read/write of data from/to the plurality of logical volumes.

15. In re claim 36, Beardsley et al. shows cache memories [col 9, lines 17-26] which enable the transfer of data between the host adaptors and the disk adaptors.

16. In re claim 37, Beardsley et al. shows a control memory [figs 3 and 6] which stores control information into a plurality of tables.

17. In re claims 38-39, Beardsley et al. shows the logical storage area is an extent corresponding to a portion of said one of the logical volumes [figs 3 and 6; 100, 104, fig 7].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. **THIS ACTION IS MADE NON-FINAL.**

Any response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

The centralized fax number is 571-273-8300.

The centralized hand carry paper drop off location is:

U.S. Patent and Trademark Office
Customer Service Window, Mail Stop _____
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application should be directed to the central telephone number (571) 272-2100.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harold Kim whose telephone number is 571-272-4148.

The examiner can normally be reached on Monday-Friday 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number


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for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 or call 571-272-1000.

uk

Harold J. Kim
Patent Examiner
February 20, 2007/HK


DONALD SPARKS
SUPERVISORY PATENT EXAMINER